

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

Claim 1 (currently amended): An apparatus comprising:  
a differential preamplifier stage ~~having~~ including a differential output; and  
a distributed differential amplifier stage ~~having~~ including a differential end termination interface coupled to the differential output.

Claim 2 (currently amended): The apparatus of claim 1, further including a feedback element to manipulate a signal to be provided to the distributed differential amplifier stage.

Claim 3 (original): The apparatus of claim 1, further including a bridging element coupled between a differential input of the distributed differential amplifier stage and a differential output of the distributed differential amplifier stage.

Claim 4 (currently amended): The apparatus of claim 3, wherein the bridging element comprises a ~~microstrip~~ transverse electromagnetic transmission line segment.

Claim 5 (currently amended): The apparatus of claim 1, wherein the distributed differential amplifier stage comprises a first output transmission line and a second output transmission line and wherein the second output transmission line is differentially coupled to the first output transmission line.

Claim 6 (original): The apparatus of claim 5, wherein the first output transmission line and the second output transmission line are coupled by at least one passive element.

Claim 7 (currently amended): The apparatus of claim 1, wherein the differential output comprises a first line and a second line and wherein the differential end termination interface comprises at least one passive element coupled between a the first line and a the second line of the differential output.

Claim 8 (currently amended): An apparatus comprising:  
a differential preamplifier stage coupled to a distributed differential amplifier stage, wherein the distributed differential amplifier stage ~~has~~ includes a first output transmission line and a second output transmission line and wherein the first output transmission line is differentially coupled to a the second output transmission line.

Claim 9 (currently amended): The apparatus of claim 8, wherein the distributed differential amplifier stage ~~has~~ includes a differential end termination interface.

Claim 10 (currently amended): The apparatus of claim 9, wherein the differential end termination interface couples a differential output of the ~~lumped~~ differential preamplifier stage.

Claim 11 (currently amended): An apparatus comprising:  
a differential traveling wave amplifier ~~having~~ including a differential input and a differential output; and  
at least one bridging element coupled between the differential input and the differential output.

Claim 12 (original): The apparatus of claim 11, further comprising a first transistor coupled to a first line of the differential input and a second transistor coupled to a first line of the differential output.

Claim 13 (currently amended): The apparatus of claim 12, wherein at least one of the at least one bridging element is coupled between the first transistor and the second transistor.

Claim 14 (currently amended): The apparatus of claim 11, wherein the differential output includes first and second lines and further comprising a current source coupled between the first and second lines of the differential output.

Claim 15 (original): The apparatus of claim 11, further comprising at least one damping element coupled to the at least one bridging element.

Claim 16 (currently amended): A system comprising:  
a differential preamplifier stage ~~having~~ including a differential output;  
a distributed differential amplifier stage ~~having~~ including a differential end termination interface coupled to the differential output; and  
an optical fiber coupled to the distributed differential amplifier stage.

Claim 17 (original): The system of claim 16, further including an optical modulator to modulate a signal received from the distributed differential amplifier stage.

Claim 18 (currently amended): The system of claim 16, further comprising a feedback element to manipulate a signal to be provided to the distributed differential amplifier stage.

Claim 19 (original): The system of claim 16, further including a bridging element coupled between an input and an output of the distributed differential amplifier stage.

Claim 20 (original): The system of claim 19, wherein the bridging element comprises a transverse electromagnetic transmission line segment.

Claim 21 (currently amended): The system of claim 16, wherein the differential amplifier stage includes first and second output transmission lines and wherein the ~~differential amplifier stage further includes a~~ first output transmission line of the differential amplifier stage ~~is~~ differentially coupled to a the second output transmission line of the differential amplifier stage.

Claim 22 (original): The system of claim 21, further comprising an output differential end termination interface coupled to the first and second output transmission lines.

Claim 23 (original): A method comprising:  
terminating a differential output of a differential preamplifier stage via a differential end termination interface of a distributed differential amplifier stage.

Claim 24 (original): The method of claim 23, further including modulating an output signal of the distributed differential amplifier stage.

Claim 25 (original): The method of claim 23, further including limiting an amplitude of the differential output.

Claim 26 (currently amended): The method of claim 23, further including feeding back the differential ~~signal~~ output to manipulate the differential output.

Claim 27 (original): The method of claim 23, further including bridging an input line and an output line of the distributed differential amplifier stage with a transverse electromagnetic transmission line segment.

Claim 28 (original): The method of claim 23, further including differentially coupling a first output transmission line and a second output transmission line of the distributed differential amplifier stage.